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A FOURTH POLYMORPHIC ALLIANCE IN EPIDENDRUM

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THROUGHOUT our studies of North American Epidendrum, one group of species has been a constant source of perplexity. In part this perplexity has arisen from an inadequate knowledge of the types, and in still greater measure from the variability and close affinity of the species. The first difficulty (inadequate knowledge of the types) has been removed by the receipt of flowers from the types of *Epidendrum oncidioides* Lindl., *E. graniticum* Lindl., *E. gravidum* Lindl., *E. Mooreanum* Rolfe and *E. profusum* Rolfe, for which we have to thank Sir Arthur W. Hill, Director of the Royal Botanic Gardens, Kew, and of a flower from the type of *E. guatemalense* Klotzsch which was kindly sent to us by Dr. Rudolf Mansfeld of the Botanisches Museum, Berlin-Dahlem. The second source of confusion (variability and close affinity of the species) has been gradually eliminated by the receipt of more material, among which were certain linking forms, and by a critical study of the various elements. These comparisons and the true interpretation of formerly uncertain types have led us to believe that here again we are dealing, not with several distinct species, but with an alliance composed of varying forms of a single poly-

morphic species.

EPIDENDRUM ONCIDIOIDES ALLIANCE

The constituents of this alliance present several marked lines of variation: in the stature of plant, in the character of inflorescence, in verrucosity of the ovary, and in the presence or absence of auriculate emergences of the column. The extremes of these variations would seem to indicate good species and have been so recognized, but the presence of intergrades and specimens showing a combination of characters point to one variable species. The trends of variation or the linkage of characters, however, render recognizable a typical form and five varieties.

The typical form of *Epidendrum oncidoides* as described and figured by Lindley from a plant sent to him by Richard Harrison, probably from South America, is a tall plant with a panicle about three feet long. The pseudobulb is ellipsoid and bears three ensiform leaves nearly two feet long and two inches wide. The inflorescence is an open panicle with the widely divaricate branches distant and not very long. The flowers are shown as being about three centimeters in diameter. The sepals and petals are dull chrome yellow, heavily blotched toward their apex with a dull red-brown and are greenish yellow on their exterior surface. The lip is a dull chrome yellow with short brown-purple lines on the mid-lobe. The sepals are shown as cuneate-oblong with obtuse tips. The petals are round-spatulate with a narrow claw and are inrolled on the apical margin. The lip is distinctly 3-lobed with a well-marked isthmus, with the lateral lobes erect, clasping the column and oblong, their apices rounded and the mid-lobe is suborbicular and cuspidate (due to the inrolling of the apical margins).

The following synopsis sets forth briefly the characters of the concepts that have formerly been considered

separate entities.

Epidendrum graniticum Lindl. of which the type is *Schomburgk 195* from British Guiana. It is described as having attenuate ovoid pseudobulbs with two ensiform leaves much shorter than the many-flowered panicle. The sepals and petals are spreading and lanceolate, subequal and acute. The lateral lobes of the lip are linear-oblong, the mid-lobe unguiculate and obovate with the inflexed apex acute. Schomburgk noted the sepals and petals as green dotted with purple, the lip as white with a purple stain at its base and the stem six feet high. The photograph of the type shows the petals as spatulate-oblongate.

Epidendrum gravidum Lindl. of which the type was collected by Hartweg at Xapatam, Mexico. It is described as having a scape nearly six inches high with four long-stalked horizontal green flowers, which never open. The ovary is described as olive-green, covered with pale-green warts. The flowers are said to be pendulous and long-pedicellate. Lindley's statement that the flowers never open is not borne out by specimens clearly referable to this form, although the flowers of his specimen (as illustrated in *Sched. Orch. 4 (1923) t. 2*) apparently did not open.

Epidendrum guatemalense Klotzsch of which the type was from Guatemala growing in the orchid-house of Mr. Allardt. It is described as 2-leaved, the leaves linear-lanceolate, 11–18 inches long and $\frac{1}{2}$ –1 inch broad. The sepals and petals are green minutely spotted with brown-violet; the sepals oblong, attenuate at both ends; the petals spatulate and short-acute. The lip is white, the lateral lobes enfolding the column, the mid-lobe orbicular, deflexed and with narrow parallel violet lines. The auricles of the column, as seen in the flower from the type, are not so pronounced as one is led to believe from

the description.

Epidendrum oncidioides Lindl. var. *graniticum* Lindl. is based on *E. graniticum* Lindl.

Epidendrum spectabile Focke of which the type was collected in Surinam by Focke. It is described as having 2- to 3-leaved pseudobulbs, the leaves ensiform or linear and two feet long. The inflorescence is paniculate and two to three feet long. The sepals are oblong-obovate and the petals orbicular-ovate and unguiculate. Both sepals and petals are pale greenish and densely spotted with dark purple. The lip is 3-lobed; the lateral lobes oblong, surrounding the column; the mid-lobe suborbicular, violet striped, with the margin crisped. The ovary is said to be muricate.

Epidendrum affine Focke of which the type was collected in Surinam by Focke. The plant is described as having 2-leaved turbinate pseudobulbs with the ensiform or linear leaves scarcely a foot long. The inflorescence is two feet high and paniculate. The sepals are broadly lanceolate and apiculate, and the petals spatulate. The lip is 3-lobed with the lateral lobes oblong and the mid-lobe suborbicular and apiculate. The sepals and petals are greenish, the lip is white.

Epidendrum giganteum Hort. Belg. apud Planch. is a nomen applied in horticulture to a form referable to var. *gravidum*.

Epidendrum Guillemianum Hort. apud Planch. is said to be from Mexico and is a nomen applied to a form referable to var. *gravidum*.

Epidendrum ramonense Reichb. f. of which the type is *Wendland 1009* (1007?) collected at San Ramon, Costa Rica. It is described as having a diffuse panicle with the branches fractiflex and somewhat asperate. The sepals are cuneate-oblong, acute, the petals spatulate-obovate, obtusely acute. The lip has ligulate, obtuse lateral lobes

and a cordate-triangular mid-lobe. The perianth segments are brown-green, the lip white with red stripes. The drawing in the Reichenbachian herbarium shows the reflexed column which is diagnostic of this variety.

Epidendrum Mooreanum Rolfe of which the type was a plant from Costa Rica sent to Kew by Mr. F. W. Moore. It is described as having linear leaves one foot long and 9–11 lines broad, a sparsely branched panicle and an asperate-verrucose ovary. The sepals are lanceolate-linear, subacute; the petals oblanceolate, subobtuse. The lip is about 5 lines long, the lateral lobes subspatulate, the mid-lobe broadly elliptic [actually almost suborbicular]. The perianth segments are pale green, the lip deep purple [?], the “front lobe” broadly margined with very light green.

Epidendrum profusum Rolfe of which the type is supposed to be from Mexico. It is described as having ovoid pseudobulbs with two or three leaves which are ligulate, 18–35 cm. long and 1.5–2.5 cm. broad. The inflorescence is a subcompact many-flowered panicle. The sepals and petals are pale yellow-green; the sepals oblong-lanceolate, subobtuse, 2.3 cm. long; the petals spatulate-lanceolate, subobtuse, 2.3 cm. long. The lip is 1.8 cm. long, white, the mid-lobe purple lined; the lateral lobes oblong; the mid-lobe elliptic or suborbicular, the veins verruculose.

Encyclia Mooreana Schltr. based on *Epidendrum Mooreanum* Rolfe.

Encyclia oncidiioides Schltr. based on *Epidendrum oncidiioides* Lindl.

Encyclia gravida Schltr. based on *Epidendrum gravidum* Lindl.

Encyclia ramonensis Schltr. based on *Epidendrum ramonense* Reichb.f.

Encyclia granitica Schltr. based on *Epidendrum graniticum* Lindl.

Epidendrum alanjense Ames of which the type was collected by Pittier at Alanje in the Province of Chiriqui, Panama. It is described as having 2-leaved pseudobulbs, the leaves ligulate, up to 30 cm. long and 1.4 cm. wide. The inflorescence is racemose and has about six flowers. The pedicellate ovary is said to be scabridulous. The sepals are narrowly elliptic-oblong, the petals are elliptic-spatulate. The 3-lobed lip is about 13 mm. long; the lateral lobes are triangular-lanceolate and obtuse; the mid-lobe is orbicular; the nerves minutely papillose.

Encyclia Hunteriana Schltr. of which the type is *Powell 84* collected near David in the Province of Chiriqui, Panama. It has olive-green flowers with a white lip striped with red and is reducible to *Epidendrum alanjense* Ames.

Encyclia Powellii Schltr. of which the type is *Powell 83* collected in the Province of Chiriqui, Panama. Dr. Schlechter compares the species with *Epidendrum profusum* Rolfe, but it is reducible to *E. ramonense* Reichb. f.

Epidendrum amandum Ames of which the type is *Powell 271* collected in the foothills east of Panama City, Panama. It is described as having 1- or 2-leaved pseudobulbs; the leaves ligulate, 4-15 cm. long, 1 cm. wide. The peduncle with the raceme is 8-14 cm. long, equalling the leaves, the raceme is 2- to 4-flowered. The pedicellate ovary is smooth. The sepals are narrowly elliptic-oblong, the petals are spatulate or oblanceolate. The lip has oblong, obtuse lateral lobes and a suborbicular mid-lobe; the isthmus between the lateral lobe and the mid-lobe is said to be almost obsolete.

Epidendrum peraltense Ames of which the type is *Lankester & Sancho 378* collected at Peralta, Costa Rica. It is described as having 3-leaved pseudobulbs, the leaves

ligulate, 18–30 cm. long and 2–2.5 cm. wide. The peduncle with the inflorescence is about 40 cm. long. The inflorescence is paniculate with the branches abbreviated. The pedicel and ovary are smooth. The sepals are ligulate, narrowed toward both ends and the petals are narrowly oblanceolate. The lateral lobes of the lip are oblong and are separated from the orbicular-ovate mid-lobe by a short isthmus. The flowers are greenish yellow and the lip has purple markings. This form is suggestive of var. *ramonense*, but has the straight column of the species proper.

Encyclia Brenesii Schltr. of which the type is *Brenes 253* collected at San José de San Ramon, Costa Rica. From the description and the drawings sent to us by Dr. Schlechter, this species appears reducible to *Epidendrum Mooreanum* Rolfe.

Encyclia Tonduziana Schltr. of which the type is *A. & C. Brade 1274* collected at Cismo near San Jeronimo de Grecia, Costa Rica. From the description and the drawings sent to us by Dr. Schlechter, this species seems reducible to *Epidendrum Mooreanum* Rolfe though the lateral lobes of the lip approach the typical form in shape.

A tabulated study of the available specimens of the various constituent species of the alliance (species formerly believed to be distinct) brought out the following lines of separation:

1. The presence or absence of lateral auricles on the column. These auricles are sometimes reduced to more or less developed teeth.
2. The column more or less sharply reflexed in the middle as opposed to the column straight.
3. The shape of the petals and their breadth as compared with that of the sepals.
4. The shape of the lateral lobes of the lip.

5. The length of the lateral sepals in combination with minor variation in the shape of the lateral lobes of the lip.
6. The shape of the lateral lobes of the lip in combination with the transition from the cushion callus to the three central nerves of the lip.

Basing determinations on these lines of separation, one is able to differentiate six variants which are, in the main, reasonably constant florally though often quite variable vegetatively, especially so in regard to the inflorescence and the size of the plant.

As one would expect, these variations show some intergrades, but we believe that they may be considered as a species and five varieties.

KEY TO THE VARIETIES OF EPIDENDRUM ONCIDIoidES

- a. Column with a distinct lateral auricle or well-developed tooth on each side
- b. Column more or less sharply reflexed in the middle, veins of the mid-lobe of lip usually smooth or nearly so.
- c. Petals broadly spatulate-oblongate, commonly markedly broader than the sepals; column with conspicuous rounded auricles; sepals and petals blotched with red-brown or dotted with red-purple
oncidoides
- c. Petals merely oblongate, little broader than the sepals or sometimes narrower; column with narrow tooth-like auricles when auriculate; sepals and petals self-color greenish or greenish yellow
var. ramonense
- b. Column nearly straight (not at all reflexed or slightly recurved); veins of the mid-lobe of lip verruculose
- c. Lateral lobes of lip triangular-lanceolate (rarely triangular-ovate) to oblong
var. gravidum
- c. Lateral lobes of lip spatulate or oblong-spatulate
- d. Lateral sepals 15 mm. or less long (usually much less); lateral lobes of lip spatulate
var. Mooreanum

d. Lateral sepals 20 mm. or more long; lateral lobes of lip oblong-spatulate

var. *profusum*

a. Column without a distinct lateral auricle on each side, at most with a small angulate tooth

b. Column more or less sharply reflexed in the middle; veins of the mid-lobe of lip usually smooth

var. *ramonense*

b. Column nearly straight (not at all reflexed or slightly recurved); veins of the mid-lobe of lip commonly verruculose

c. Lateral lobes of lip spatulate or oblong-spatulate

var. *Mooreanum*

c. Lateral lobes of lip not spatulate nor oblong-spatulate

d. Lateral lobes of lip oblong-pandurate; transition from the apically bidentate cushion-callus to the nerves abrupt

var. *perplexum*

d. Lateral lobes of lip triangular-lanceolate (rarely triangular-ovate) to oblong; transition from the cushion-callus to the three central nerves gradual

var. *gravidum*

***Epidendrum oncidioides* Lindley in Bot. Reg. 19 (1833) t. 1623.**

Epidendrum graniticum Lindley in Hooker Lond. Journ. Bot. 3 (1841) 83.

Epidendrum guatemalense Klotzsch in Allg. Gartenz. 20 (1852) 250.

Epidendrum oncidioides Lindl. var. *graniticum* Lindley Fol. Orch. Epid. (January 1853) p. 11.

Epidendrum spectabile Focke in Bot. Zeit. 11 (April 1, 1853) 229.

Epidendrum affine Focke in Bot. Zeit. 11 (May 6, 1853) 341.

Encyclia oncidioides Schlechter Orchideen (1914) 210.

Encyclia granitica Schlechter in Fedde Repert. Beihefte 6 (1919) 74.

Plant up to a meter tall with a creeping rhizome. Roots fibrous, stout, glabrous. Pseudobulb ovoid, slender-pyriform or cylindric, up to about 10 cm. long, invested by imbricating fibrous, scarious sheaths, 2- to 3-leaved. Leaves up to 60 cm. long, up to 4.8 cm. broad, commonly much smaller, linear-ligulate to oblong-linear, obtuse to acute, more or less conduplicate below, strongly coriaceous. Inflorescence surpassing the leaves, loosely paniculate or rarely subsimple, with relatively short spreading branches. Flowers medium-sized with spreading segments. Pedicellate ovary smooth to verruculose. Lateral sepals elliptic-lanceolate, oblong-ob lanceolate or oblanceolate, more or less asymmetric, 14–18 mm. long, 5–6.5 mm. wide, acute to short-acuminate, dorsally more or less carinate-thickened near the tip. Dorsal sepal elliptic-lanceolate to oblanceolate, 14–17 mm. long, 5–6.2 mm. wide, acute to subacute. Petals elliptic-spatulate, obovate-spatulate or round-spatulate with a narrow claw, 13–16.9 mm. long, 6–8 mm. wide, short-acuminate, acute or rounded with an acute tip. Lip almost free from the column, deeply 3-lobed, 13.1–15 mm. long from base of column to tip of mid-lobe; lateral lobes erect and clasping the column in natural position, horizontally spreading when expanded, very asymmetrical, oblong, oblong-pandurate, triangular-oblong to obliquely ovate, 5.6–8.9 mm. long on the interior margin, apex obtuse to broadly rounded; mid-lobe separated from the lateral lobes by a short and distinct isthmus, suborbicular-ovate (rarely), suborbicular to transversely oval, 6–7.3 mm. long, 6.2–9.8 mm. wide, apex acute to broadly rounded or slightly retuse and apiculate, base subcordate to rounded and somewhat cuneate, anterior margin plicate, veins smooth or rarely verruculose; disc with two fleshy ridges making a fovea on the isthmus and extending into fleshy radiating lines on the mid-lobe, the central one sometimes

prominently carinate-thickened. Column stout, gently reflexed about at the middle, with prominent incurved rounded auricles, 7.2–8.5 mm. long dorsally.

DISTRIBUTION: Mexico, Guatemala, Honduras, Trinidad, Colombia, Venezuela, Dutch Guiana (Surinam), French Guiana and Brazil.

***Epidendrum oncidioides* Lindl. var. *ramonense* (Reichb.f.) Ames, Hubbard & Schweinfurth comb. nov.**

Epidendrum ramonense Reichenbach filius Beitr. Orch. Centr.-Am. (1866) 81.

Encyclia ramonensis Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 473.

Encyclia Powellii Schlechter in Fedde Repert. Beihefte 17 (December 1922) 46.

Plant up to about one meter tall, caespitose with approximate pseudobulbs. Pseudobulbs ovoid to narrowly pyriform, 2- to rarely 4-leaved. Leaves linear-elliptic to lorate, up to 60 cm. long, up to 2.3 cm. wide, acute to rounded at the apex. Inflorescence much surpassing the leaves, laxly paniculate, the panicle simple or compound, with spreading often rather long branches. Pedicellate ovary smooth or slightly verruculose. Lateral sepals elliptic-lanceolate or oblong-lanceolate, more or less asymmetric, 14.2–18 mm. long, 3.7–4.8 mm. wide, acute or short-acuminate, dorsally carinate near the apex. Dorsal sepal elliptic-lanceolate to oblong-lanceolate, 14–17.8 mm. long, 3.6–4.8 mm. wide, acute or short-acuminate, thickened at the apex. Petals narrowly oblanceolate or oblanceolate to spatulate-oblanceolate, 14–17 mm. long, 3–5.5 mm. wide, subacute to short-acuminate, usually not much broader than the sepals. Lip 12–15 mm. long from base of column to tip of mid-lobe; lateral

lobes oblong, triangular-oblong, oblong-ovate or subquadrate-oblong, very asymmetric, more porrect when expanded than in the typical form, 4–6 mm. long on the interior margin, obtuse broadly rounded or subtruncate at apex; mid-lobe ovate or broadly ovate to suborbicular, 6.9–10 mm. long, 6.2–8.5 mm. wide, anterior margin plicate and more strongly inrolled toward the apex than in the typical form, short-acuminate to rounded at the apex, rounded-truncate or slightly cuneate at base; disc as in the typical form, but the veins more often somewhat verruculose. Column rather more reflexed than in the typical form, without auricles or with more or less distinct angles or small dentiform auricles, 7–8.4 mm. long dorsally.

DISTRIBUTION: Honduras, Costa Rica and Panama.

Epidendrum oncidioides* Lindl. var. *gravidum
(Lindl.) Ames, *Hubbard & Schweinfurth comb. nov.*

Epidendrum gravidum Lindley in Journ. Hort. Soc. 4 (1849) 114: ampl. Ames in Sched. Orch. 4 (May 1923) 42, t. 2.

? *Epidendrum giganteum* Hort. Belg. apud J. E. Planchon Hort. Donat. (1855) 164, *nomen*, non Poiret.

? *Epidendrum Guillemianum* Hort. apud J. E. Planchon Hort. Donat. (1855) 164, *nomen*.

Encyclia gravida Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 472.

Epidendrum alanjense Ames in Sched. Orch. 1 (November 1922) 13.

Encyclia Hunteriana Schlechter in Fedde Repert. Beihefte 17 (December 1922) 46.

Encyclia Powellii Schlechter apud Ames in Sched. Orch. 4 (May 1923) 35 in synonym., *errore*.

Epidendrum amandum Ames in Sched. Orch. 4
(May 1923) 36.

Epidendrum peraltense Ames in Sched. Orch. 4
(May 1923) 46.

Plant very variable in size, much more so than in any other form of the alliance, 11 to approximately 60 cm. tall, caespitose with approximate pseudobulbs. Pseudobulbs pyriform-cylindric to broadly ovoid, 1- (rarely) to 3-leaved. Leaves linear-lorate to ligulate-lanceolate, 7-41 cm. long, 0.8-2.9 cm. wide. Inflorescence variable, simple and loosely few-flowered-racemose to rather densely compound-paniculate, shorter than or much exceeding the leaves. Pedicellate ovary smooth or verruculose to strongly muricate when mature. Flowers frequently somewhat smaller than those of var. *ramonense*. Lateral sepals elliptic-lanceolate or oblong-lanceolate, 10.6-19.4 mm. long, 2.9-4.8 mm. wide, acute to acuminate, dorsally thickened or carinate near the apex. Dorsal sepal oblong-lanceolate to elliptic-lanceolate or oblanceolate to elliptic-oblanceolate, 11-18.8 mm. long, 2.7-4.5 mm. wide, subacute to acuminate, thickened at the apex. Petals narrowly oblanceolate to spatulate-oblanceolate, 10-18.5 mm. long, 2.6-4.5 mm. wide, subacute to acute. Lip 10-15.1 mm. long from base of column to tip of mid-lobe; lateral lobes triangular-lanceolate to triangular-ovate or narrowly to broadly oblong (sometimes falcate), asymmetric often decidedly so, more or less porrect when expanded, 4.1-6.1 mm. long on the interior margin, obtuse to broadly rounded at the apex which is sometimes recurved; mid-lobe transversely oval to suborbicular or rhombic-ovate to suborbicular-ovate (rarely broadly obovate or weakly 3-lobulate), 4.8-10.2 mm. long, 5.1-8.1 mm. wide, short-acuminate to rounded (sometimes with a blunt apicule) or rarely truncate at the apex, cuneate to rounded at the base, margin plicate

or undulate near the apex or throughout; disc as in the typical form, the three to five central veins usually more prominent, all the veins apt to be verruculose to verrucose. Column straight to somewhat recurved, with obscure angles varying to large incurved rounded auricles, 5.1–7.5 mm. long dorsally.

Variety *gravidum* is the most variable and perplexing of all the varieties. The specimens which in the past were referred to *E. peraltense* show strong tendencies toward var. *ramonense* in the often somewhat recurved column, but the flowers are smaller and the lateral lobes of the lip are more apt to taper toward their apex and to approach, in this character, the form heretofore recognized as *E. gravidum*. The larger rounded auricles suggest the typical form of the species.

DISTRIBUTION: Mexico, Honduras, Nicaragua, Costa Rica and Panama.

Epidendrum oncidioides Lindl. var. **Mooreanum** (Rolfe) Ames, Hubbard & Schweinfurth comb. nov.

Epidendrum mooreanum Rolfe in Kew Bull. (1891) 199.

Encyclia Tonduziana Schlechter in Fedde Repert. Beihefte 19 (November 1923) 132.

Encyclia Brenesii Schlechter in Fedde Repert. Beihefte 19 (November 1923) 221.

Plant up to about 80 cm. tall (perhaps more), caespitose. Pseudobulbs ovoid or pyriform to cylindrical, 2- to 4-leaved. Leaves lorate or linear-lanceolate, 18–30 cm. long, 1.4–2.3 cm. wide. Inflorescence much exceeding the leaves, simple- or compound-paniculate with short or long fractiflex branches, loosely flowered. Pedicellate ovary commonly smooth, very rarely slightly verruculose toward the summit. Flowers tend to be more fleshy than those of the other forms of this alliance and to have more

concave sepals and petals. Lateral sepals oblong-lanceolate to elliptic-lanceolate or elliptic-oblong, 12.1–15.8 mm. long, 3.1–4.9 mm. wide, subacute to sharply acute, dorsally carinate-thickened near the apex. Dorsal sepal oblong-ob lanceolate or elliptic-ob lanceolate, 11.8–15.8 mm. long, 3–4.9 mm. wide, obtuse to acute, more or less thickened at the apex. Petals spatulate, ob lanceolate-spatulate or oblong-spatulate, 11.1–14 mm. long, 3.2–5.7 mm. wide, rounded to acute at the apex. Lip 9.9–12.9 mm. long from base of column to foremost extent of mid-lobe; lateral lobes rarely oblong-spatulate or spatulate to obovate-spatulate with the apical portion usually bulbous-dilated, commonly more or less asymmetric, sometimes very porrect when expanded, rarely lobulate, 5–6.1 mm. long on the interior margin, broadly rounded at the apex; mid-lobe suborbicular-ovate or subquadrate-ovate to suborbicular or suborbicular-quadrate, very rarely lobulate below the middle, apt to be reduplicate, 6–9.1 mm. long, 6.5–9 mm. wide, subobtuse to broadly rounded or subtruncate at the base; margin not distinctly plicate, but more or less undulate; disc much as in the typical form, veins less prominent than in the typical form though more fleshy and smooth to minutely verruculose. Column straight or nearly so, without auricles, with obscure angles or with minute sharp auricles, 5.1–7.2 mm. long.

DISTRIBUTION: Costa Rica and Panama.

Epidendrum oncidioides* Lindl. var. *profusum* (Rolfe) Ames, *Hubbard & Schweinfurth comb. nov.

Epidendrum ambiguum Lindley as misdetermined by Rolfe in *Orch. Rev.* 21 (1913) 215.

Epidendrum profusum Rolfe in *Bot. Mag.* 140 (1914) t. 8551.

Plant possibly up to 60 cm. tall, caespitose. Pseudobulbs ovoid, 2- to 3-leaved. Leaves ligulate, 18–35 cm. long, 1.5–2.5 cm. wide. Inflorescence much exceeding the leaves, paniculate. Flowers the largest of the alliance, about 4.5 cm. in diameter. Pedicellate ovary smooth. Lateral sepals elliptic-lanceolate, about 23 mm. long and 6 mm. wide, dorsally carinate near the apex, subobtuse. Dorsal sepal oblong-ob lanceolate, about 23 mm. long and 5.2 mm. wide. Petals oblanceolate-spatulate, about 23 mm. long and 7 mm. wide. Lip about 18 mm. long; lateral lobes oblong-spatulate, porrect when expanded, 8.8 mm. long on the interior margin, obtuse to broadly rounded at the apex; mid-lobe suborbicular, 11.4 mm. long, 13.2 mm. wide, broadly rounded and indistinctly retuse at the apex, broadly cuneate at the base, margin throughout more or less undulate; disc much as in the typical form, veins very distinct especially the three median ones and verruculose. Column straight, with well-developed rounded auricles, 8.2 mm. long dorsally.

The foregoing description was compiled as follows: the vegetative portion from the original description by Rolfe, the floral portion chiefly from a single flower of the type.

DISTRIBUTION: Mexico (by inference).

Epidendrum oncidioides *Lindl.* var. **perplexum** *Ames, Hubbard & Schweinfurth var. nov.*

Pseudobulbus pyriformis, bifoliatus. Inflorescentia laxa paniculata. Sepala lateralia elliptico-lanceolata. Sepalum dorsale oblanceolato-oblongum. Petala oblanceolato-spathulata. Labellum profunde trilobatum; lobi laterales pandurato-oblongi, apice oblique truncati vel rotundati; lobus medius suborbicularis. Columna exauriculata.

Material fragmentary, all parts separate. Pseudobulb pyriform, 2-leaved. Leaves linear-oblong, 16.2–16.8 cm. long, up to 1 cm. wide. Inflorescence loosely paniculate, incomplete but about twice surpassing the leaves. Pedicellate ovary smooth. Flowers medium-sized. Lateral sepals elliptic-lanceolate, about 16 mm. long, 4.5–4.9 mm. wide, acute. Dorsal sepal oblanceolate-oblong, about 16 mm. long, 4.1–4.7 mm. wide, acute. Petals oblanceolate-spatulate, 15–16.5 mm. long, 4.3–4.9 mm. wide, acute. Lip 13.2–14 mm. long from base of column to tip of mid-lobe; lateral lobes oblong-pandurate, asymmetric, porrect when expanded, about 7.8 mm. long on the interior margin, obliquely truncate or rounded at the apex; mid-lobe separated from the lateral lobes by a very short but distinct isthmus, suborbicular, 8.2–9 mm. long, 9–9.5 mm. wide, slightly retuse to weakly trilobulate and apiculate at the apex, cuneate at the base; disc much as in the species except that the transition from the apically bidentate cushion-callus on the claw to the thickened veins is abrupt; veins minutely verruculose. Column without auricles, 7–7.9 mm. long dorsally.

Variety *perplexum* seems intermediate between var. *ramonense* and var. *Mooreanum*. From the former it differs in the slightly longer sepals and petals, in the rounded or slightly retuse apex of the mid-lobe of the lip and in the longer and pandurate lateral lobes. It is separable from var. *Mooreanum* by the venation of the mid-lobe of the lip and by the pandurate not spatulate lateral lobes of the lip. In texture, the flowers are thinner than those of the allied varieties. However, the most striking character which separates this variety from all other forms of the alliance is the more prominent basal sulcate callus and its abrupt transition to the veins.

MEXICO, State of Vera Cruz, Zacuapan. On a tree. May 1907. *C. A. Purpus 7692* (TYPE in Herb. Univ. Calif. No. 198168.)

One other variety of *Epidendrum oncidioides* has been described and figured by W. Zimmermann (Bibl. Bot. Heft 109 (Orch. nov. bras.) (1934) 6): *E. oncidioides* Lindl. var. *Itabirae* W. Zimmerm. We have not seen material of this variety and from the description and drawing are unable to place it. It suggests the typical form in many respects, but tends toward var. *profusum* in other characteristics.

BRAZIL, Minas Geraes, Pico de Conceição, *Freyberg s.n.*